

Claims

[c1] We claim:

1. A disc brake comprising:

a support member fixed to an housing of a vehicle, said support member having a base with perpendicular first and second arms that extend therefrom, said first arm having a first perpendicular projection that extends therefrom and said second arm has a second perpendicular projection that extends therefrom, said first perpendicular projection having first and second lateral bores that extends there through while said second perpendicular projection has third and fourth lateral bores that extends there through, said first and third bores being aligned in a first vertical plane with respect to said base while said second and fourth bores are alignment in a second vertical plane with respect to said base such that said first, second, third and fourth bores are in a same horizontal plane with respect to said base;

a first lever having a first opening located between a first end and a second end with a bore adjacent said first end, said bore retaining a piston to define an actuation chamber that is selectively connected to a source of pressurized fluid, said second end retaining a first friction

member;

a first pin retained in said first and third bores and extending through said first opening in said first lever to define a first pivot point for said first lever to position said first friction member adjacent a first face of a rotor;
a second lever having a second opening located between a first end and a second end, said second end retaining a second friction member;

a second pin retained in said second and fourth bores and extending through said second opening in said second lever to define a second pivot point for said second lever to position said first end of said second lever adjacent said piston and said second friction member adjacent a second face of said rotor;

actuation means for supplying said actuation chamber with pressurized fluid that acts on said piston causing said first lever to pivot about said first pivot point and said second lever to pivot about said second pivot point and correspondingly move said first and second friction members into engagement with said first and second faces of said rotor to effect a brake application.

- [c2] 2. The disc brake as recited in claim 1 further including:
a first bearing arrangement located in said first opening of said first lever and a second bearing arrangement located in said second opening of said second lever, said

first pin engaging said first bearing arrangement and said second pin engaging said second bearing arrangement such that any arcuate moment created through the engagement of said first friction member with said first face and said second friction member with said second face is transmitted into said first and second pins without effecting the pivoting of said first and second arm on said first pin and said second pin.

[c3] 3. The disc brake as recited in claim 2 wherein said first and second friction members each have a wear pattern that develops through engagement with said rotor, said wear pattern radially increases as a function of a distance that a friction member is from a pivot point.

[c4] 4. The disc brake as recited in claim 3 wherein said piston is characterized by a dome that provides for point contact between said piston and said first end of said second lever during the transmission of an input force into the second lever pivot to cause the second lever to pivot on said second pin and move said second friction member into contact with said second face of said rotor during a brake application.

[c5] 5. The disc brake as recited in claim 4 wherein said first end of said second lever is characterized by curved surface that is mated with said dome of said piston to

maintain said point contact during pivotal movement of said second lever about said second pin with changes in said wear pattern.

[c6] 6. The disc brake as recited in claim 5 wherein said curved surface is characterized by a concave shape that mates with the dome of said piston to minimized the introduction of a resultant component from said input force into said second lever.

[c7] 7. The disc brake as recited in claim 6 further including spring means attached to said support and said first and second levers for urging said first and second friction member away from said first and second faces on said rotor.

[c8] 8. The disc brake as recited in claim 6 wherein said first lever is further characterized by a second bore that is parallel to said bore therein for retaining a second piston to define a second actuation chamber that is connected to said actuation chamber therein, said second piston having a dome shape on a end that engages said first end of second lever to provide a second actuation force to effect said brake application.

[c9] 9. The disc brake as recited in claim 8 wherein the actuation force applied by said piston and said second actu-

ation force applied by said second piston to said first end of said second lever are substantially of a same magnitude.

- [c10] 10. The disc brake as recited in claim 1 wherein said first and second pins restrain said first and second levers from acruate rotation and as a result said first and second friction members are also restrained from rotating about a radial plane such that a substantial uniform wear pattern occurs across the friction members during a brake application.